REPORT OF THE VASCULAR SOCIETY :-

"Review of the Configuration of Specialised Vascular Surgery Services in the North East of England"

January 11th and 12th 2016

Reviewers

Mr Kevin Varty, Consultant Vascular Surgeon, Cambridge.
Hon Secretary of the Vascular Society

Professor John Brennan, Consultant Vascular Surgeon, Liverpool
Chair of the Education Committee of the Vascular Society

Mr Peter Dixon, Senior Service Specialist, Specialised Commissioning, NHS England – North (North East & Cumbria)

Background

The background to this review is summarised in the document "North East vascular services case for change " . This identified that there were too many providers of vascular surgery in the North East, and stated that the North East based vascular surgeons agree that the most appropriate model for the North East is to have a maximum of three vascular centres. In addition the case for change recommended that the review should be undertaken by Independent Reviewers.

The Vascular Society Executive nominated two of its members above, to carry out the review. The reviewers were asked to recommend the most effective and safe configuration of Specialised Vascular Surgery Services within the North East of England.

Assessment of the service will be based on NHS England's Specialised Vascular Services (Adults) service specification A04/S/a and the standards and policies referenced within this service specification, together with the Clinical Commissioning Policy: Complex Endovascular Stent Grafts in Abdominal Aortic Aneurysm. Additionally the recommendations of the Vascular Society "Provision of Services for Patients with Vascular Disease 2015" will be used.

All trusts in the review were asked to complete a compliance matrix against the Service Specification standards. Data on the number of index procedures (AAA , CEA) performed in each trust are available from both HES and the NVR. Data averaged over the 5 years 2009 – 14, annual individual numbers, and 2014 NVR data alone (NVR annual report) were all available.

HES data for AAA procedures are summarised in the following tables. These are indicative of level of current vascular activity.

Table 1-A: Number of *Elective* Hospital Admissions for Repair of AAA, with one or more specified procedure codes

Provider	2010	2011	2012	2013	2014	TOTAL
CITY HOSPITALS SUNDERLAND	47	40	38	37	35	197
COUNTY DURHAM AND DARLINGTON NHS FT	31	29	52	55	41	208
GATESHEAD HEALTH NHS FT	17	16				33
NORTH CUMBRIA UNIVERSITY HOSPITALS NHS TRUST	**36**	**26**	**30**	**37**	**38**	**167**
SOUTH TEES HOSPITALS NHS FT	67	58	57	55	62	299
NEWCASTLE UPON TYNE HOSPITALS NHS FT	99	107	111	101	98	516
TOTAL	297	276	288	285	274	1,420

Table-B: Number of *Emergency* Hospital Admissions for Repair of AAA, with one or more specified procedure codes

Provider	2010	2011	2012	2013	2014	TOTAL
CITY HOSPITALS SUNDERLAND	15	6	10	3	3	37
COUNTY DURHAM AND DARLINGTON NHS FT	4	2	8	8	5	27
GATESHEAD HEALTH NHS FT	2	4			1	7
NORTH CUMBRIA UNIVERSITY HOSPITALS NHS TRUST	**3**	**5**	**1**	**4**	**2**	**15**
SOUTH TEES HOSPITALS NHS FT	9	19	18	26	22	94
NEWCASTLE UPON TYNE HOSPITALS NHS FT	23	22	28	23	12	108
TOTAL	56	58	65	64	45	288

The NVR outcomes in terms of AAA mortality rates and CEA stroke and death rates are satisfactory for all the units in the region.

This report summarises each site visit and the relevant issues relating to providing vascular services in the NE region. This is followed by the recommendations of the reviewers.

Monday 11th Jan

The review began with a meeting with representatives from the Vascular Clinical Network, at Freeman Hospital.

Attending this initial session were;

Chair & Network Vascular Lead	Prof Gerry Stansby
CVD Network Manager	Mrs Alison Featherstone
Network Medical Director	Dr Robin Mitchell
Network Diabetes Lead	Dr Rahul Nayer
Network Radiology Lead	Dr Ralph Jackson
Network Renal Lead	Dr Sean Fenwick (deputising)
Network Stroke Lead	Represented by Mrs Alison FeatherstoneCVD Manager

The reviewers began the meeting by stating that, based on our initial assessment of the geography and population, the region would be best served with 3 Arterial Centres. We did not feel that a 2 centre solution based in Newcastle and Middlesborough would be workable. Both would struggle to deal with the centralised workload and the responsibility of maintaining adequate services at Non-Arterial Centres.

Prof Stansby explained that there was uncertainty about the vascular service in Carlisle and that responsibility for North Cumbria may eventually be redirected towards Newcastle. A variable proportion of this work already flows into Newcastle.

Dr Nayer was of the view that Diabetic Foot Services would be best managed with a 3 centre solution. The region currently has high amputation rates in diabetics but there was a feeling that the overwhelming majority of these were clinically appropriate in patients presenting late with advanced disease.

Dr Jackson explained that IR services were stretched in most of the region. The only compliant rota was in Newcastle, currently 1 in 6, previously 1 in 8. Because of this there is a tendency for urgent/emergency work to be referred to Newcastle. There was a feeling that clarity around vascular services would help with recruitment and retention of numbers. Middlesborough recently lost 2 IR to the Middle East. One plus in the region is the presence of very good facilities and support staff in Gateshead, Sunderland and Durham.

Renal services are based in Newcastle, Sunderland (covering Durham) and Middlesborough (covering Darlington). It was felt that the best solution would be for Arterial Centres to be co-located with Renal services.

Stroke services in the region are currently provided in 10 Hyperacute Stroke Units and it was recognised that this was too many. A review is currently underway to reduce this to 6 or 7.

Review of Vascular Service in Newcastle

Present –
Surgeons - Prof Gerry Stansby, Mr Tim Lees, Mr Mike Clarke

Centralised at Freeman Hospital. Population 796,500. Average 86 AAA per year. 6 surgeons working in 2 teams of 3. Do not work Cons of Week system, continue to do elective work when on call. 31 bed vascular ward. Two vascular theatres, 2 IR rooms. EVARs performed in IR. Business case being prepared for conversion of one operating theatre to a hybrid room. Linked with RVI, single Trust on 2 sites. RVI hosts Trauma Centre, Stroke Unit and Diabetes. No outreach clinics.
Weekly MDT to discuss complex aortic cases. Diabetic Foot MDT, 1 surgeon with interest, combined WR with Diabetology.
Average 77 carotids per year. Flexible working to accommodate on elective lists. Aim to do majority within 1 week of referral.
Discussed potential for developing outreach links with Northumbria Healthcare, Carlisle and possibly Gateshead. Clinicians were confident they had capacity to cope with an increase in workload if required.

Sunderland

Met in boardroom for working lunch. Presentation from Mr Bannerjee regarding their vision to act as a third Arterial Centre for the region followed by roundtable discussion with all present. We then had a tour of the hospital followed by further discussion in the boardroom.

Present initially were;
Surgeons – Mr Paul Dunlop, Mr Andrew Brown, Mr Klaus Overbeck, Mr Ben Bannerjee & Mr S Vetrivel
Interventional Radiology – Dr Maciej Karasek, Dr Ralph Marsh
Diabetes – Dr Rahul Nayar, Dr Peter Carey (late afternoon)
Renal – Dr Sean Fenwick, Dr Saeed Ahmed
Cardiology – Dr Shahid Junejo
Stroke – Dr Nik Majmudar
Vascular Anaesthesia – Dr David Laws
Ward sister – Jan Willis
Nurse Specialist – Sister Ruth Chipp
Peter Sutton - Executive Director of Strategy & Business Development
Managers – Ms Felicity White
Dr Shaz Wahid - Medical Director, South Tyneside NHS Foundation Trust (late afternoon)

Currently serving population of 495,000. Averaging 33 AAA per year, majority as EVAR by single surgeon.
Operate hub and spoke model with South Tyneside, robust transfer protocols.
Single vascular ward, 2 team-based ward rounds per week, daily junior round. Limited junior support, 2 trainees. Decommissioned wards available to open if achieve Arterial Centre status.
Use of single vascular theatre – hybrid suite. 2 decommissioned theatres available to open. 2 IR rooms, one in need of refurbishment. 8 Vascular Anaesthetists.
18 bed Critical Care Unit, 80% occupancy. Large Renal Unit, provide outreach to Durham. All vascular access performed in Sunderland. Large Stroke Unit, 39 beds.
Proactive Cardiology service, bidding to become primary PCI provider.

In discussion they presented their vision to act as a third Arterial Centre for the region. Envisaged expanding to 42 beds, no service move required. Additional Critical Care capacity in place. Would need to open 2nd vascular theatre alongside hybrid suite. Expansion would need to be staffed appropriately. Management were fully supportive of this and confident that recruitment would be aided by the review.

Tuesday 12th Jan 2016.

Middlesbrough

We met with the local team for initial discussions and then had a tour of the facilities, followed by lunch with a further opportunity to ask questions and clarify issues.

Present at the initial meeting were

Surgeons	Mr Ian Nichol, Mr Reza Mofidi
Interventional Radiologist :	Dr Simon Milburn
Vascular Anaesthetist	Dr Matt Cheeseman
Surgical Centre Managing Director	Sandra Donoghue
Director of Finance	Maxime Hewitt-Smith

Medical Director for Specialised Services	Mike Stewart (Lunch)
Medical Director	Richard Wight (Lunch)

Population served 850,000. Averaging 70-80 AAA repairs elective and emergency. Activity in line with POVS 2015. Currently 6 vascular surgeons, 4 interventional radiologists, 6 anaesthetists with a vascular interest. Have recently lost an interventional radiologist moving abroad, trying to recruit with a view to establishing the required 6 interventionalists. Recruitment can be difficult. Vascular operating lists every day plus access to an emergency NCEPOD list. Hybrid theatre for endovascular/open procedures. A significantly expanded unit would need additional theatre capacity. Full range of vascular procedures performed including vascular access . Good pre-assessment service with CPET. One main fluoroscopy room for interventional procedures. Additional rooms available which could be reorganised to increase IR capacity.

The vascular ultrasound is provided by sonographer's from the central radiology department. Some clinics provided with one stop ultrasound but not all. Waiting times for scans short. Vascular Ward 26 beds can increase to 31. 16 ITU/HDU beds with plans for a PACU. Three surgical care practitioners increasing to 4 in the near future. Middle grade support includes general surgery. On-call COTW model free from elective commitments. Weekends Friday to Sunday. Diabetic foot MDT takes place but weekly clinics need to be developed.

Spoke units in Hartlepool, North Tees, and Friarage. Clinics at all spokes, access procedures at Redcar.

In discussion the local team felt reasonably satisfied with the current service provided. Compliant with most of the service specification and POVS 2015. Would benefit from some increase in the size of the unit to provide the critical mass supporting the staffing levels and facilities. Recruitment to difficult areas would potentially be improved by this. The geographically close hospital at Darlington with good road links was discussed. Some other services between these hospitals are linked.

Durham

We met the local team with a brief presentation from Mr Philip Davey leading the visit. Following discussions, we had a tour of the facilities and then a further meeting to discuss and close the visit.

Attendees
Surgeons : Mr Philip Davey, Mr Vish Bhattacharya, Mr Ian Hawthorn, Mr Patrick Cullen, Mr Hamdy Ashour.
IR – Dr Stuart Marsden
Anaesthetist – Dr David Hamilton
Nurse Consultant – Mr Darren Hird
Ms Sue Jacques – CEO
Dr Chris Gray – Medical Director
Mr Steve Atkinson – ACOO (QEH)

Mr Richard Morris – ADO (CDDFT)
Mr Dean Trainer – Head of Service
Mr Jeremy Cundall – Care Group Director

Population served approximately 820,000. Durham, Darlington, Gateshead. Averaging 50-60 AAA repairs elective and emergency (HES) per year. Activity just in line with POVS 2015. Currently 8 vascular surgeons, 2 interventional radiologists, 10 anaesthetists with a vascular interest. Have struggled to recruit to interventional radiology, hope is that when the uncertainty about regional services is resolved recruiting will be better. Currently there is no 24/7 IR cover. Access to 2 operating theatres for vascular work, one a hybrid theatre. Emergency/ urgent lists in the other theatre on alternate days. For an expanded unit would need to run 2 theatres per day. Complex aortic work referred to Freeman hospital, no vascular access procedures. Good pre-assessment service with CPET. Two IR rooms for interventional procedures.

Vascular lab on site, one stop clinics available. Vascular Ward 23 beds can increase to 34. 10 ITU/HDU beds. May be able to re-organise ITU provision with Darlington to increase use of ITU beds across the 2 hospital sites. More then available for Vascular at Durham. Plan also to increase level 1 care. Four Vascular specialist nurses. Middle grade support includes general surgery. 1 staff grade at Gateshead. On-call Consultant is free from elective commitments. Weekends Friday to Sunday.

Spoke units in Darlington supported with a Nurse Consultant. Gateshead is a spoke, although not totally "non-arterial". Currently AAA cases are centralised to Durham plus emergency cases. Elective carotid and lower limb bypass procedures still performed at Gateshead, 3 years after decision to centralise services. The uncertainty over the future regional plans were offered as one reason for the delay in completing the centralisation process. Gateshead management very supportive of the collaboration with Durham, population south of Gateshead does not look towards Newcastle for services necessarily.

Although in recent years some of the surgeons have been performing both vascular and significant amounts of general surgery, this has changed in the last year and most are now largely purely vascular focussed.

Management plans include a re-organisation of services with Darlington and Bishops Auckland with Durham as an "emergency centre" and other sites "elective". These changes should help with capacity for Vascular at the Durham site.

Diabetic medicine, stroke and cardiology on site. Renal services networked from Sunderland.

In discussion, the potential to expand to provide services for a larger centre was explored. With completion of the Gateshead surgeons moving to Durham, there will be sufficient Consultant manpower, providing the dropping of general surgery commitments remains. Before taking on the extra-workload of a larger unit, the current carotid and lower limb work in Gateshead would need to be accommodated. Then the extra work from an expanded unit would need to be accommodated. Theatre capacity would need to expand. IR will be very stretched. 3 surgeons are dual trained and could help with some vascular IR sessions. The changes in ITU / HDU service referred to above will also be important since the current number of beds (10) is

small for a large vascular centre. The strategic plans to make Durham an emergency centre will help with meeting some of these capacity issues.

Recommendation

1. Geography and numbers, 2 v 3 unit provision. Two large units would have to be sited in Newcastle and Middlesborough. Our initial view was that the numbers and geography were not conducive to a 2 centre solution and our findings during the review confirmed this. Neither unit has the capacity to cope with what would need to be a significant expansion. Our findings support the locally held view that the region is best served with 3 Arterial Centres and this is our recommendation. In recommending a 3 centre model for the region it is crucial that each unit is of sufficient size to be sustainable in terms of activity in order to enable the clinical, managerial, training and economic benefits of centralised vascular care to be realised. Of particular importance is the need to ensure that an Arterial Centre is appropriately resourced to deal with the additional workload that arises as a result of reorganisation. Whilst much of the focus is on aneurysms and carotids the reality is that most Arterial Centres struggle to cope with the increase in peripheral vascular disease workload. This requires an adequate inpatient bedbase (including Critical Care) as well as operating theatre and interventional radiology capacity, which are often overlooked in the desire to achieve Arterial Centre status. Failure to resource reorganisation appropriately results in many of the advantages of centralisation failing to be met.

2. Newcastle is the largest centre in the region. We would recommend they review their catchment population as part of the reorganisation. It is anomalous that vascular services in Gateshead are aligned with Durham, although we understand the reasons why this came about. Given that the CCGs in Newcastle and Gateshead have merged we would recommend that vascular services in Gateshead are provided from Newcastle in a hub and spoke arrangement. The increase in workload would require a modest increase in capacity, which appears manageable. We would, however, recommend the development of a new clinical model to provide outreach cover to Gateshead as a Non-Arterial Centre and also the introduction of a Consultant of the Week system, with complete separation of elective and on call commitments in Newcastle.

3. Middlesbrough is the next largest centre in the region and is also co-located with a major trauma centre. The current service is close to being compliant with the service specification and POVS 2015. An increased catchment population would justify 2 additional IR consultants and some modest increase in theatre capacity, which would address the potentially weak areas in the service at present. The unit would therefore benefit from some expansion in the regional reconfiguration, and logically this would arise as a result of incorporation of Darlington as a Non-Arterial Centre. This is in keeping with other clinical alignments already in place as well as ongoing work to align services in the Tees valley. We would therefore recommend that Middlesborough is commissioned to extend its remit to provide vascular services to Darlington, which will act as a Non-Arterial Centre.

4. If the above recommendations are enacted it follows that the third Arterial Centre will merge the vascular units in **Sunderland and Durham**, with one becoming the Arterial Centre

and the other a Non-Arterial Centre. Based on population data and activity we are confident this would create a sustainable unit in line with service specification and POVS 2015.

Both sites made a very strong case to become the third Arterial Centre, demonstrating strong clinical relationships and excellent management support. Our principal considerations in making a final recommendation were an assessment of the ability of either site to meet the

capacity requirements of the merged unit and an assessment of geography and population density of the area to be provided for. **Whilst the final decision was undoubtedly difficult it is our recommendation that the third Arterial Centre is commissioned in Sunderland, providing services to Durham and South Tyneside.**

The following factors were considered in making this decision :

- **Geography**. Travel times between all the units in the region are below 1 hour which in many regions has been the travel time limit considered to be maximum for emergencies. The HES data shows that currently most ruptured AAA's in the region already go to Newcastle and Middlesbrough. The number travelling to Durham or Sunderland are single figures annually, and this number will decrease in future due to screening. For other urgent cases, (chronic critical limb ischaemia, diabetic foot, TIA) a strong non-arterial centre service should maintain assessment of cases in the same geographic location as at present. For the West of the region, an arterial centre in Durham would be closer and convenient for the rural, relatively dispersed, population. However the above considerations of what is needed for emergency care highlights that this is not an essential or strong factor to consider in placing arterial and non-arterial centres.

- **Capacity.** Both Sunderland and Durham would need to invest in new staff and facilities to meet the increased demand of a merged Arterial Centre. There was strong management representation and support at both visits, which we took as a marker of management commitment to make these investments at whichever site was chosen. A number of areas were considered; Consultant surgeons, IR, anaesthesia, ITU / HDU, ward beds, nursing, technologists and middle-grade support. Similar capacity exists in both units for some of these but two areas that we felt were a particular challenge for Durham were IR (2 Consultant Interventionists Durham vs. 4 Sunderland) and ITU/HDU provision (10 beds Durham vs 18 Sunderland). Much was made during our visit to the whole region of the difficulty recruiting IR specialists. Recruiting 4 more in Durham to meet the national specification would be very demanding.

- **Current Network**. Sunderland currently provide a strong visiting service to the non-arterial centre at South Tyneside. The support demonstrated during our visit from South Tyneside clinical staff was excellent. We felt this was a good demonstration of a commitment to outreach working, which is vital for successful vascular networks. The situation at Durham was less clear. A partial in-reach network exists with Gateshead at present. We had some anxiety that there was a reluctance to make this a full outreach service. The current partial system has been in place for 3 years with no clear reason for the delay in completing the process. The other area that was not entirely clear at Durham was the need to complete changes to other services (moving elective services to Darlington and Bishop Auckland, adjusting ITU/HDU between Darlington and Durham) in order to create sufficient capacity for a merged Arterial Centre in Durham.

- **Related Specialities**. Whilst there is no absolute need to be co-located with other medical specialities, provided services can be accessed, there is close interaction between stroke, cardiology, diabetic, renal and care of the elderly services and vascular surgery. Both sites provided evidence of good cross-specialty working but we felt that there was demonstration of particularly strong on-site support in Sunderland from Cardiology (large PCI service), Renal and Stroke/Care of Elderly/Rehab services. It was

  our view that these strong links would be particularly conducive to supporting the significantly increased inpatient workload generated by a merged Arterial Centre in Sunderland.

Summary

This independent review of Vascular Services in the North East of England was carried out by 2 nominated representative of the Executive of the Vascular Society of Great Britain and Ireland. After two days visiting the 4 centres in the region which currently provide on-site vascular services including arterial interventions, the following recommendations have been made to reconfigure services onto 3 Arterial Centres with networked Non-Arterial sites

1. Newcastle, networking with Gateshead

2. Sunderland, networking with South Tyneside and Durham

3. Middlesbrough, networking with Darlington in addition to current networked sites.

Authors

K Varty
J Brennan
Jan 2016

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